

2.3

What's the Story?

It's important to be good at reading the “story” in a graph. Remember that the y -axis, or vertical axis, of a graph usually represents the *dependent variable*, and the x -axis, or horizontal axis, represents the *independent variable*. Here are some questions to ask when you look at a graph.

What are the variables represented by the graph?

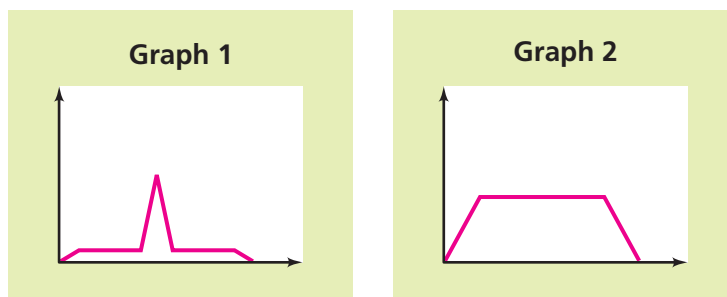
Do the values of one variable seem to depend on the values of the other?

In other words, do changes in one variable seem to be the result of changes in the other?

What does the shape of the graph say about the relationship between the variables?

Getting Ready for Problem 2.3

The number of cars in a school parking lot changes as time passes during a school day. These graphs show two possibilities for the way the number of cars might change over time.



- Describe the “story” each graph tells about the school parking lot. Which graph shows the pattern you expect?
- How could you label the graph you chose so that someone else would know what it represents?

Problem 2.3 Interpreting Graphs

Questions A–G describe pairs of related variables. For each pair,

- Decide which variable is the dependent variable and which is the independent variable.
- Find a graph that tells a reasonable “story” about how the variables might be related. If no graph tells a reasonable story, sketch your own.
- Explain what the graph tells about the relationship of the variables.
- Give the graph a title.

A. The *number of students* who go on a school trip is related to the *price of the trip* for each student.

B. When a skateboard rider goes down one side of a half-pipe ramp and up the other side, her *speed* changes as *time* passes.

C. The *water level* changes over *time* when someone fills a tub, takes a bath, and empties the tub.

D. The *waiting time* for a popular ride at an amusement park is related to the *number of people in the park*.

E. The *number of hours of daylight* changes over *time* as the seasons change.

F. *Weekly attendance* at a popular movie changes as *time* passes from the date the movie first appears in theaters.

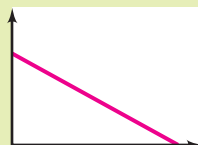
G. The *number of customers* at an amusement park with water slides is related to the *predicted high temperature* for the day.



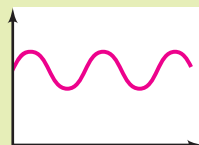
Graph 1



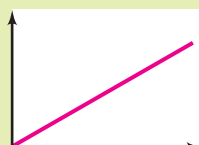
Graph 2



Graph 3



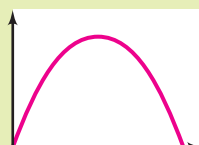
Graph 4



Graph 5



Graph 6



ACE Homework starts on page 35.